FTI for the Air Traffic Community

Overview of FTI

Strategic Vision!

The FAA Telecommunications Infrastructure (FTI) Strategic Vision is to achieve an integrated suite of products, services and business practices that better meet the present and future telecommunications needs of the National Airspace System (NAS) in the 21st century.

The current FAA telecommunications includes a mix of owned and leased services that lacks flexibility and cost effectiveness. The FTI program introduces managed change in both network services and business processes. FTI will be the primary means through which the FAA obtains telecommunication services for the next 13 years.

Who?

In July 2002, the FTI contract awarded a 15-year contract to Harris Corp. of Melbourne, Fla. to provide and manage the new WAN that will tie together 5,000 manned and unmanned air traffic control sites with voice, video and data links. Harris is overseeing a team of over a dozen telecom and networking vendors, including the regional Bell operating companies, Sprint Corp. and Raytheon Co. They will migrate five different FAA networks and a variety of subnets to the new FTI network.

How?

The transition of FAA operational telecommunications services from the current FAA owned and leased "legacy" infrastructure to the FTI has been segmented into two phases. This two phase approach evolved from extensive studies and computer based analysis that focused upon the FAA's desire to minimize transition risk, manage the operational costs associated with several years of operating both the legacy and FTI systems, and developing a practical approach to accomplishing an orderly and efficient implementation.

Frequently Asked Questions

1. How will FTI affect ATC facilities?

There are three major objectives during FTI implementation. 1) Perform quickly and efficiently 2) Minimize disruption and 3) Continuity of service. In order to achieve these objectives, there will be a period of dual operations to ensure FTI performs as advertised.

2. Are there any changes to Air Traffic Operations?

No. There will be no changes to Air Traffic Operations due to FTI. FTI will provide telecommunications services. The systems that will be replaced are primarily in telco rooms or back room spaces that have limited interaction with ops floor and performance. Telecommunication service cutovers will be performed according to local procedures involving appropriate coordination with local AT Personnel to coordinate appropriate times for circuit release and cutover. FAA will verify FTI Service Acceptance before each cutover.

3. What is the FTI Network Architecture?

The FTI architecture supports a wide range of voice, data, and video services to support operational requirements. It includes an extensive use of digital services, Synchronous Optical Network (SONET) used for access at over 300 FAA facilities, dedicated transmission services used for critical voice and data, Asynchronous Transfer Mode (ATM)/Frame Relay services used for non-critical data, and multi-service Customer Premise Equipment (CPE) that supports technology upgrades.

4. What is the short-term need for air traffic cooperation with respect to service outages and FTI cutover activities?

There will be short, service outages during cutovers. These outages are anticipated during "hot-cutovers," which are needed due to a lack of alternate communication paths or duplicate LINCS and FTI circuits. The hot-cutovers will be coordinated between the appropriate ATO representatives according to established procedures for requesting and granting telecommunications maintenance or outage activities.

5. What are the pathfinder sites?

Pathfinder sites are not test sites, but facilities where the FAA and Harris Corporation validate and refine processes and procedures for transition to FTI. These sites exercise and evaluate transition and implementation processes and procedures in operational Air Traffic Control facilities. The Pathfinder sites, ZKC (Kansas City) and ZFW (Fort Worth), were selected because regional and facility management expressed enthusiasm for participating as FTI pathfinders, and to satisfy the requirement to have facilities with adjacent airspaces residing in different regions. This strategy mitigates risk before full-scale implementation begins across the NAS.

6. What is the status of risk mitigation through testing?

Operational Test and Pathfinder for transition backbone services have been successfully completed. Five interphone circuits and two digital data circuits between ZKC and ZFW have been cutover and are currently carrying live operational traffic.

7. What risk mitigation activities are in place?

The overall transition to FTI represents an undertaking of unprecedented magnitude, criticality, and complexity. Operational telecommunications is mandatory for ensuring the safe and expeditious management of air traffic operating within the NAS. For these reasons the FTI Program Office determined that risk mitigation activities such as WJHTC verification testing would be supplemented by field actions. Risk mitigation includes a detailed verification process that involves equipment and interface verification at the Harris test bed, WJHTC validation and Operational Testing, formal site and service acceptance testing at the facilities, pathfinder implementations that validated procedures and processes, and key site testing which is planned for particularly complex implementations such as en route radars. Identified potential risks and associated mitigation procedures are also documented in the Site Specific Implementation Plans for each facility. FTI has established forums such as the National Implementation team that facilitate sharing of issues and concerns as well as corrective actions across the NAS. The FTI Program has a formal risk management plan that identifies and tracks the resolution of programmatic risks.

8. What is the transition strategy for FTI?

FTI transition is divided into two phases: The focus of Phase 1 is on the " Transition backbone" connecting ARTCCs, ATCSCC, NNCCs, WJHTC, VOLPE, and OEX. The second phase proceeds to build out all remaining sites. Initial activity during phase 2 will prepare sites, install equipment and services between LINCS 'A' nodes (usually large TRACONS, ATCTs, and AFSSs).

9. What is the status of transition for FTI?

For Phase 1, all site surveys are completed for the 27 Transition Backbone sites. Site implementation and acceptance has been completed at approximately 20% of the sites, and service acceptance/cutover are completed between ZKC and ZFW. Minor adjustments to the Phase 1 schedule are being made as transition evolves. Problems are being documented/resolved and lessons learned are provided to site and regional staff. Cutover coordination procedures are documented and adjusted as necessary at the NAS and facility levels for FTI and for the users/maintainers of legacy transport and multiplexing networks.

10. Are there transition schedules available?

Yes. Detailed schedules are available through FTI intranet site: www.tipt.faa.gov/FTI.

11. Does FTI apply to ops circuits only?

The current architecture of FTI deals only with NAS Operational services. Administrative services are the subject of an in-progress study that may result in some of these types of services/ mission support services being eventually integrated into FTI.

12. Under FTI, will TELCO services be the same?

The fundamental architecture of FTI differs significantly from the legacy transport and multiplexing systems it replaces. FTI manages services at the service level, which means redundancy, avoidance, maintenance, performance reporting and monitoring, diversity, and outage reporting are all performed at the individual service level as compared to the LINCS transport system that aggregates and manages services to some bundled transport level such as a T-1 circuit.

13. How are telecommunications problems reported?

Harris will manage the FTI network through the functionality of the Network Management Operations (NMO). FTI NMO is a combination of people, hardware, software, processes and procedures that enable Harris and its teammates to manage FTI telecommunications services and to provide the FAA with insight into FTI performance through the NMO User Interface. Harris is responsible for managing telecommunications services within the FTI infrastructure (SDP-to-SDP). They do so by monitoring data collected by their CPE that is forwarded to the Harris NOCC. The Harris NOCC integrates monitored data from multiple sources to determine the performance of physical paths that provide FTI services. Harris service provider teammates monitor their segments of the telecommunications service, and when they discover a problem on their segment, send a trouble ticket to the Harris NOCC for processing. Raytheon, an additional Harris teammate, is responsible for maintaining the Harris-installed CPE installed at FAA facilities.

14. Will FTI attempt to remove shout hotlines as a cost savings?

No. All operational ATC services in use today will be transitioned to FTI with equivalent performance and functionality. Future services will be provided by FTI in accordance with user requirements.

15. Are there interim guidelines or procedures available?

Yes. The objective of the NMO Interim Processes document is to discuss the available guidelines and procedures for NMO. This document is available upon request or through the FTI intranet site: www.tipt.faa.gov/FTI.

16. Does NATCA have an FTI rep?

Yes. Greg Kardong is the national NATCA technical representative for FTI and has been working with the FTI Program since March 2000.

Visit the websites

faa.gov/programs/fti

tipt.faa.gov/FTI

FTI Program Team

Division Manager	Steve.Dash@faa.gov
Acting Product Team Lead	Curtis.Porter@faa.gov
Contracting Officer (ASU)	Sue.Handy@faa.gov
Acting Deputy Product Lead	Keith.Wallace@faa.gov
Transition and Implementation	Doug.Carpenter@faa.gov
Security	Jerry.Hancock@faa.gov
Network Management Operations	Luci.Holemans@faa.gov
Engineering	Maureen.Cedro@faa.gov
Technical Program Management Stakeholder Communications	Suzanne.Stoehr@faa.gov
Service Verification	Luci.Holemans@faa.gov
Business Operations	Gloria.Richmond@faa.gov
Program Control	Carey.Ragels@faa.gov